

WHAT IS CLAIMED IS:

1. A method of making a microstructure, comprising the steps of:

5 (A) providing a circuit board that includes a dielectric layer having a first surface and a second surface opposite to the first surface, and a first conductor layer formed on the first surface of the dielectric layer;

10 (B) forming a metal structure on the circuit board such that the metal structure extends from the first conductor layer toward the second surface of the dielectric layer; and

15 (C) removing at least a portion of the dielectric layer adjacent to the first conductor layer and the metal structure to result in the microstructure having one side defined by the first conductor layer.

2. The method of Claim 1, wherein step (B) includes:

20 (a) forming a hole unit in the dielectric layer that extends from the second surface to the first surface, and

(b) filling the hole unit with the metal structure.

3. The method of Claim 2, wherein, in step (A), the circuit board further includes a second conductor layer formed on the second surface of the dielectric layer,

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the sub-step (a) including:

(i) patterning the second conductor layer to

expose parts of the second surface of the dielectric layer, and

(ii) forming the hole unit in the exposed parts of the second surface of the dielectric layer.

5 4. The method of Claim 3, wherein the metal structure electrically interconnects the first and second conductor layers.

5. The method of Claim 3, wherein the metal structure thermally interconnects the first and second conductor layers.
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6. The method of Claim 3, wherein the microstructure is a hollow microstructure having four sides defined by the metal structure, and the first and second conductor layers.

15 7. The method of Claim 2, wherein the metal structure is formed by one of electro-forming, electro-plating, electroless-plating, thin film deposition, and sputtering.

8. The method of Claim 2, wherein, in step (A), the circuit board further includes a photo-resist layer coated on the second surface of the dielectric layer,
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the sub-step (a) including:

(i) patterning the photo-resist layer to expose parts of the second surface of the dielectric layer,
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(ii) forming the hole unit in the exposed parts of the second surface of the dielectric layer.

9. The method of Claim 1, further comprising the step of:

disposing a cover member on the second surface of the dielectric layer after step (C).

5 10. The method of Claim 9, wherein the microstructure is a micro-groove structure having three sides defined by the metal structure and the first conductor layer.

11. The method of Claim 1, wherein, in step (A), the circuit board further includes opposite edges that
10 interconnect the first and second surfaces of the dielectric layer, and a second conductor layer formed on the second surface of the dielectric layer, and wherein the metal structure is formed in step (B) on the opposite edges of the dielectric layer.

15 12. The method of Claim 11, wherein the microstructure is a hollow microstructure having four sides defined by the metal structure, and the first and second conductor layers.

13. The method of Claim 2, further comprising the step
20 of:

forming a lever member on the second surface of the dielectric layer after sub-step (b), the lever member having one end connected to the metal structure in the hole unit.

25 14. The method of Claim 13, wherein the microstructure is a micro-cantilever structure.

15. The method of Claim 1, wherein removal of the

dielectric layer in step (C) is conducted through one of laser ablation, etching, precision machining, and pyrolysis.

5 16. A method of making a hollow microstructure, comprising the steps of:

(A) providing a circuit board that includes a dielectric layer having a first surface and a second surface opposite to the first surface, and a conductor layer formed on the first surface of the dielectric layer;
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(B) patterning one of the first and second surfaces of the dielectric layer;

(C) forming a hole unit in the dielectric layer that extends from said patterned one of the first and second surfaces to the other of the first and second surfaces of the dielectric layer; and
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(D) disposing a cover member on the second surface of the dielectric layer.